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THE WEATHER OF THE MONTH.

By Mr. P. C. DAY, Assistant Chief, Division of Meteorological Records.

PRESSURE.

The distribution of mean atmospheric pressure for January, 1908, over the United States and Canada, is graphically shown on Chart VI, and the average values and departures from the normal are shown for each station in Tables I and III.

The pressure during January, as in the preceding month, was comparatively high over the southwestern portion of the United States, and diminished by rather steep gradients northward into Canada, and by gradients less pronounced eastward toward the Atlantic.

The region of highest pressure, 30.20 to 30.25 inches, embraced the central portion of the middle Plateau region, while the lowest pressure, about 29.80, prevailed over the Canadian Maritime Provinces.

The average pressure was above the normal over nearly the entire Rocky Mountain and Plateau districts, and below the normal from the Missouri and Mississippi valleys eastward to the Atlantic coast, and also by small amounts on the immediate Pacific coast.

The diminution of pressure northward and eastward as in the preceding month gave a preponderance of southerly surface winds with their modifying influence over the greater part of the United States and all southern districts of Canada.

A comparison of Chart VI, sea-level pressure, for the current month with that for January, 1907, together with temperature data for the two months, shows the marked influence upon the weather of any displacement of the more or less permanent areas of high and low pressure.

During January, 1907, high pressure prevailed north of the United States, the general drift of the surface winds over the northern portions of the United States was from the interior cold regions of British America, and the month was one of severe cold with frequent and heavy snowfall along the entire northern border, being especially severe in the States from Montana to the Great Lakes.

During the current month, reverse conditions prevailed, high pressure developed over the contral Plateau region, pressure over the Canadian districts was comparatively low, the surface drift along the northern border was from southerly regions and the month was one of unusual warmth.

TEMPERATURE.

January, 1908, like the preceding month, was characterized by unusual warmth over practically all portions of the United States. Warm weather was almost continuous until near the end of the month, when a cold wave of considerable severity overspread the more northern district.

The temperature averaged unusually high over the Great Plains from Texas northward into Canada, ranging from about 5° above the normal in the first named district to from 15° to 20° above over the upper Missouri and Red River of the North valleys, and the northwestern provinces of Canada.

Over the Atlantic and Pacific coast districts the departures were not so marked, ranging from 1° to 3° above the normal.

Over a narrow strip embracing eastern Alabama and western Georgia and the Appalachian Mountain districts, as far north as Maryland, there was a slight deficiency.

A rather singular coincidence in connection with the above is that in the preceding month the only portion of the United States showing temperatures below normal was embraced within practically the same narrow limits as that shown for January.

Maximum temperatures ranged from slightly above 80° in the southern portions of Florida, Texas, and California, to slightly less than 50° over New England, the Lake region, and the elevated mountain districts.

Despite the unusual warmth over the northern districts, a few periods of rather cold weather were experienced in the more southern districts, the line of freezing temperature, with accompanying frost, extending to central Florida, nearly to the coast line of Texas from Galveston to the Rio Grande, and to exposed points in southern Arizona and California.

Minimum temperatures from 15° to 25° below zero were recorded in the Rocky Mountain region from central Colorado northward, over the upper Missouri Valley and New England; while over the northern portions of North Dakota, Minnesota, Wisconsin, and Michigan minimum temperatures from —30° to —40° were recorded.

PRECIPITATION.

The distribution of precipitation during January, 1908, is graphically shown on Chart IV by appropriate shading or by figures representing the actual amount of fall over districts the topography of which is too varied to admit of approximately correct shading.

The month as a whole was one of deficient rainfall. Over a small area embracing the Appalachian Mountain region from Maryland southward to the central Gulf coast, and the greater part of California, there was an excess of precipitation ranging from 1 to 4 inches, but over the remaining districts of the United States there was a general deficiency.

Over the extreme southern portion of Florida, eastern North Carolina, central New England, portions of the Lake region, the Ohio and middle Mississippi valleys, Louisiana and eastern Texas, western Oregon and the Puget Sound district of Washington, the deficiency ranged from 1 to 2 inches.

The general lack of precipitation and the wide extent of territory covered by excess of temperature occurring in conjunction are conditions that may well be classed as unusual for a midwinter month in the United States.

SNOWFALL.

The distribution of the monthly amounts of snowfall is graphically shown on Chart VII, and the depth on ground at end of the month on Chart VIII.

In general there was about the usual depth of fall over the Appalachian Mountain region, New England, and the lower Lakes, but there was much less than the average over the upper Lakes, especially over northern Michigan, where the fall was scarcely one-half the usual depth.

The snowfall over the Ohio and Mississippi valleys, the Great Plains region, and the lower levels of the Plateau and Pacific coast districts was generally less than the average. Over most of the mountain districts there was a general deficiency of snowfall, which, with the prevailing weather, prevented any material increase in the depths accumulated at the end of December.

HUMIDITY AND SUNSHINE.

In the districts from the Rocky Mountains eastward to the Atlantic, the relative humidity ranged generally from 5 to 10 per cent less than the average. West of the mountains there was a fairly well pronounced excess of from 5 to 15 per cent.

Over the Great Plains and the eastern slope of the Rocky Mountains, western Florida and the southern portion of Arizona and California the amount of sunshine was generally well above the average.

Cloudy weather was general over California, especially in the Great Valley of that State, where the amount of sunshine was less than 30 per cent of the possible; there was also a general excess of cloudy weather over portions of the central and east Gulf States. As a whole the month was unusually favorable for the successful pursuit of all outdoor occupations.

WEATHER IN ALASKA.

Over the southeast coast, or Sitka district, the temperatures were moderate, the lowest ranging from 22° at Sitka to 10° at Skagway. Along the southern coast, including the Alaska Peninsula, the minimum temperatures ranged from 9° at Kadiak to —5° at Fort Liscum. In the Copper River Plateau and upper Yukon districts, they ranged from —45° at Copper Center to —60° at Fort Gibbon. The coldest periods occurred from the 1st to the 6th, and again about the 20th.

Snow was comparatively heavy over the southern coast district, Fort Liscum reporting 165 inches fall for the month. Over the interior districts the snowfall ranged from 4 to 10 inches and the depth on the ground at the end of the month varied from 10 to 25 inches.

But little snow occurred over the southeastern coast district, and the ground was bare at the end of the month.

Average temperatures and departures from the normal.

Districts.	Number of stations.	Average temperatures for the current month.	Departures for the current month.	Accumulated departures since January 1.	Average departures since January 1.
		°	°	°	°
New England	12	27.0	+ 2.3		
Middle Atlantic	16	33.1	+ 1.3		
South Atlantic	10	45.2	0.0		
Florida Peninsula*	8	59.6	+ 1.0		
East Gulf	11	47.2	— 0.1		
West Gulf	10	49.0	+ 3.5		
Ohio Valley and Tennessee	13	34.3	+ 0.8		
Lower Lake	10	25.4	+ 1.4		
Upper Lake	12	22.0	+ 4.0		
North Dakota*	9	18.6	+11.8		
Upper Mississippi Valley	15	26.9	+ 5.3		
Missouri Valley	12	30.0	+ 8.9		
Northern Slope	9	25.8	+ 6.8		
Middle Slope	6	36.2	+ 7.1		
Southern Slope*	7	44.3	+ 4.4		
Southern Plateau*	12	41.2	+ 2.8		
Middle Plateau*	10	27.5	+ 2.8		
Northern Plateau*	12	30.3	+ 3.0		
North Pacific	7	42.0	+ 2.5		
Middle Pacific	8	48.8	+ 1.7		
South Pacific	4	53.4	+ 2.5		

* Regular Weather Bureau and selected cooperative stations.

In Canada.—Director R. F. Stupart says:

The mean temperature of the month was higher than the average in all parts of Canada, exclusive of some of the eastern counties of Ontario, where there was a negative departure of from 1° to 3°. Near the coast in British Columbia the positive departure was from 1° to 3°, and eastward this increased to from 12° to 15° in Alberta, which differences also obtained in Saskatchewan and Manitoba. From the eastern boundary of Manitoba the positive departure from the average gradually diminished to an excess of only 3° near Lake Huron, and in southwestern Ontario the excess was between 1° and 3°. Over most of Quebec the positive departure was between 1° and 4°, and in the Maritime Provinces between 3° and 5°.

Average precipitation and departures from the normal.

Districts.	Number of stations.	Average.		Departure.	
		Current month.	Percentage of normal.	Current month.	Accumulated since Jan. 1.
		Inches.		*Inches.*	*Inches.*
New England	12	2.89	83	—0.6	
Middle Atlantic	16	3.17	97	—0.1	
South Atlantic	10	4.20	108	+0.3	
Florida Peninsula*	8	2.77	93	—0.2	
East Gulf	11	5.34	106	+0.3	
West Gulf	10	1.89	63	—1.1	
Ohio Valley and Tennessee	13	2.57	66	—1.3	
Lower Lake	10	2.37	77	—0.7	
Upper Lake	12	1.49	75	—0.5	
North Dakota*	9	0.12	21	—0.4	
Upper Mississippi Valley	15	0.96	55	—0.8	
Missouri Valley	12	0.47	48	—0.5	
Northern Slope	9	0.57	64	—0.3	
Middle Slope	6	0.36	55	—0.3	
Southern Slope*	7	0.74	79	—0.2	
Southern Plateau*	12	0.93	90	—0.1	
Middle Plateau*	10	0.84	81	—0.2	
Northern Plateau*	12	0.79	47	—0.9	
North Pacific	7	5.45	82	—1.2	
Middle Pacific	8	5.13	111	+0.5	
South Pacific	4	4.08	147	+1.3	

* Regular Weather Bureau and selected cooperative stations.

In Canada.—Director Stupart says:

The precipitation was somewhat in excess of the average in Quebec and the Maritime Provinces, and deficient in other parts of the Dominion. In British Columbia the deficiency was small; in the Western Provinces it was approximately equal to about half the average amount.

At the close of the month the Western Provinces had a covering of snow of from 2 to 5 inches, while in Ontario and Quebec there was from 6 to 30 inches of snow on the ground. In the Maritime Provinces the ground was bare in the eastern districts, and was covered to a depth of from 6 to 8 inches elsewhere.

Average cloudiness and departures from the normal.

Districts.	Average.	Departure from the normal.	Districts.	Average.	Departure from the normal.
New England	5.3	— 0.5	Missouri Valley	4.1	— 1.1
Middle Atlantic	5.3	— 0.3	Northern Slope	4.4	— 0.2
South Atlantic	5.0	— 0.3	Middle Slope	3.4	— 0.4
Florida Peninsula	4.1	— 0.6	Southern Slope	4.3	+ 0.5
East Gulf	5.6	0.0	Southern Plateau	3.6	+ 0.7
West Gulf	4.9	— 0.5	Middle Plateau	5.4	+ 0.6
Ohio Valley and Tennessee	5.9	— 0.5	Northern Plateau	6.6	— 0.7
Lower Lake	6.8	— 0.7	North Pacific	7.1	0.0
Upper Lake	6.0	— 0.8	Middle Pacific	6.8	+ 1.7
North Dakota	6.0	+ 1.3	South Pacific	5.6	+ 1.5
Upper Mississippi Valley	4.9	— 0.4			

Average relative humidity and departures from the normal.

Districts.	Average.	Departure from the normal.	Districts.	Average.	Departure from the normal.
	%			%	
New England	70	— 6	Missouri Valley	67	— 8
Middle Atlantic	72	— 4	Northern Slope	69	— 1
South Atlantic	76	— 1	Middle Slope	59	— 8
Florida Peninsula	80	— 1	Southern Slope	62	— 4
East Gulf	73	— 5	Southern Plateau	56	+ 6
West Gulf	69	— 7	Middle Plateau	74	+ 4
Ohio Valley and Tennessee	72	— 5	Northern Plateau	78	— 2
Lower Lake	77	— 4	North Pacific	86	+ 1
Upper Lake	78	— 5	Middle Pacific	84	+ 3
North Dakota	79	— 1	South Pacific	72	0
Upper Mississippi Valley	75	— 3			